REMARKS

Claims 1-4, 6-9 and 16-20 are pending. Claims 5 and 10-15 were cancelled without prejudice to or disclaimer of the underlying subject matter in amendments filed September 12, 2001 and June 3, 2002. Claim 21 has been added. Support for the foregoing amendment can be found throughout the specification and claims as originally filed, for example on page 21, lines 7-10. Upon entry of the foregoing amendment, claims 1-4, 6-9, and 16-21 will be pending. No new matter enters by way of this amendment.

1. Request for Continued Examination

The instant application was appealed to the U.S. Court of Appeals for the Federal Circuit ("Federal Circuit") on August 20, 2004. The appeal was suspended at the request of the Applicants on December 22, 2004, pending the Court's disposition of *In re Fisher*. Applicants file herewith a Request for Continued Examination under 37 C.F.R. § 1.114, and Applicants will file a Motion for Voluntary Withdrawal Under F.R.A.P. § 42(b) of the appeal in the Federal Circuit on October 4, 2005.

2. Claim Rejections – 35 U.S.C. § 101

Claims 1-4, 6-9, and 16-20 stand rejected under 35 U.S.C. § 101, because the claimed invention is allegedly not supported by either a "specific, substantial, and credible utility or, in the alternative, a well-established utility." Final Action at pages 3. Applicants respectfully traverse this rejection.

The "basic quid pro quo contemplated by the Constitution and the Congress for granting a patent monopoly is the benefit derived by the public from an invention with substantial utility...where specific benefit exists in currently available form." *Brenner v. Manson*, 383 U.S. 519, 534-35, 148 U.S.P.Q. 689, 695 (1966). As previously argued, Applicants have met this part of the bargain – the present specification discloses nucleic acid molecules which, in their current form, provide at least one specific benefit to the public, for example, use to encode a rice protein or fragment thereof. *See, e.g.* Specification at page 12, lines 17-20, Table 1. This benefit is specific, not vague or unknown, and it is a "real world" or substantial benefit.

The "threshold for utility is not high: An invention is 'useful' under section 101 if it is capable of providing some identifiable benefit." *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366, 51 U.S.P.Q.2d 1700, 1702 (Fed. Cir. 1999), *citing Brenner v. Manson*, 383 U.S. 519, 534 (1966). Furthermore, an invention need only provide one identifiable benefit to satisfy 35 U.S.C. § 101. *See Raytheon Co. v. Roper Corp.*, 724 F.2d 951, 958, 220 U.S.P.Q. 592, 598 (Fed. Cir. 1983) ("when a properly claimed invention meets at least one stated objective, utility under section 101 is clearly shown").

The courts have expressed a test for utility that hinges on whether an invention provides an "identifiable benefit." *Juicy Whip, Inc. v. Orange Bang, Inc.*, 185 F.3d 1364, 1366, 51 U.S.P.Q.2d 1700, 1702 (Fed. Cir. 1999), *citing Brenner v. Manson*, 383 U.S. 519, 534 (1966). For analytical purposes, the requirement for an "identifiable benefit" may be broken into two prongs: (1) the invention must have a specific, *i.e.*, not vague or unknown benefit, *In re Brana*, 51 F.3d 1560, 1565, 34 U.S.P.Q.2d 1436, 1440 (Fed. Cir. 1995); and (2) the invention must provide a real world, *i.e.*, practical or "substantial"

benefit. *Fujikawa v. Wattanasin*, 93 F.3d 1559, 1563, 39 U.S.P.Q.2d 1895, 1899 (Fed. Cir. 1996). A corollary to this test for utility is that the invention must not be "totally incapable of achieving a useful result," *i.e.*, the utility must not be incredible or unbelievable. *Brooktree Corp. v. Advanced Micro Devices, Inc.*, 977 F.2d 1555, 1571, 24 U.S.P.Q.2d 1401, 1412 (Fed. Cir. 1992).

The Federal Circuit has recently provided guidance as to the kind of disclosure an application could contain to establish a specific and substantial utility. *In re Fisher*, -- F.3d --, 2005 WL 2139421 (Fed. Cir, September 7, 2005). First, the Court indicated that the specification disclose "that an invention is useful to the public as disclosed in its current form." *Id.* Second, the Court further noted that the specification "also show that that claimed invention can be used to provide a well-defined and particular benefit." *Id.* Applicants have provided nucleic acid sequences which are shown in the specification to correlate to known genes. Such a correlation is sufficient to satisfy the utility standard. *Id.*

Applicants maintain that the present specification discloses specific and substantial uses for the claimed nucleic acid molecules, including use to encode the recited rice protein or fragment thereof (*see, e.g.,* specification at page 12, lines 17-20, Table 1 and the sequence listing); use to identify polymorphisms related to the recited protein (*see, e.g.,* specification at page 57, line 3 through page 64, line 4); use to transform plants (*see, e.g.,* specification at page 69, line 7 through page 87, line 20); and to determine the level or pattern of expression of the recited protein or mRNA associated with that nucleic acid molecule (*see, e.g.,* specification at page 64, lines 5-22).

One of ordinary skill in the art would recognize that the claimed nucleic acid molecules have utility, for example, to encode the recited protein upon reading the present specification. These utilities are immediately apparent for the claimed nucleic acid molecules without further research.

An examiner must accept a utility by an applicant unless the Office has evidence or sound scientific reasoning to rebut the assertion. *See In re Oetiker*, 977 F.2d 1443, 1445, 24 U.S.P.Q.2d 1443, 1444 (Fed. Cir. 1992). "More specifically, when a patent application claiming a nucleic acid asserts a specific, substantial, and credible utility, and bases the assertion upon homology to existing nucleic acids or proteins having an accepted utility, the asserted utility must be accepted by the examiner unless the Office has sufficient evidence or sound scientific reasoning to rebut such as assertion." Federal Register 66(4):1096, Utility Guidelines (2001). "[A] 'rigorous correlation' need not be shown in order to establish practical utility; 'reasonable correlation' is sufficient." *See, Fujikawa v. Wattanasin*, 93 F.3d 1559, 1565, 39 U.S.P.Q.2d 1895, 1900 (Fed. Cir. 1996). "An Applicant can establish this reasonable correlation by relying on statistically relevant data documenting the activity of the compound or composition, arguments or reasoning, documentary evidence, or any combination thereof." M.P.E.P. § 2107.03, at page 2100-43. Applicants have demonstrated such a reasonable correlation.

The claimed nucleic acid molecules have been asserted to encode a plant protein or fragment thereof. The specification provides ample correlation between the claimed nucleic acid molecules and the recited protein. Accordingly, the assertion of the use of the claimed nucleic acid molecules to encode the recited protein or fragment thereof satisfies the utility requirement of 35 U.S.C. § 101.

Applicants have disclosed a specific, substantial and credible utility for the claimed nucleic acid molecules. Any one of these utilities is enough to satisfy the requirements of 35 U.S.C. § 101. Because Applicants need only establish a single utility to satisfy 35 U.S.C. § 101, and have done so in the present case, the rejection under Section 101 is incorrect. Reconsideration and withdrawal of this rejection are respectfully requested.

3. Claim Rejections – 35 U.S.C. § 112, first paragraph, enablement

Claims 1-4, 6-9, and 16-20 were rejected under 35 U.S.C. § 112, first paragraph, as not being enabled by the specification, because the claimed invention allegedly lacks utility (*i.e.,* an invention with no utility cannot be enabled). Applicants respectfully traverse this rejection and note that this rejection has been overcome by the foregoing arguments regarding utility. Thus, the specification teaches a person of ordinary skill to make and use the claimed transformed plants and methods. Accordingly, the enablement rejection under 35 U.S.C. § 112, first paragraph, is improper. Reconsideration and withdrawal are respectfully requested.

4. Claim Rejections – 35 U.S.C. § 112, 1st Paragraph, Written Description

The Examiner has rejected claims 1-4, 6-9, and 16-20 under 35 U.S.C. § 112, first paragraph, for allegedly lacking an adequate written description. Final Action at pages 4-5. Applicants respectfully disagree.

Despite the Examiner's admission that the specification describes SEQ ID NO: 1 (Office Action mailed September 25, 2001, at page 6), the adequacy of the written

description has been challenged by the Examiner allegedly because "one skilled in the art would not recognize from the disclosure that the applicant was in possession of the genus of DNAs or RNAs encompassed in claims 1-4, 6-9 and 16-20, which comprises the sequence of the claimed SEQ ID NO." Final Action at page 5. The basis for the Examiner's challenge is that "there is substantial variability among the species of the polynucleotides or nucleic acids encompassed within the scope of the claims. . . due to the use of the open language 'comprising' or 'having'." *Id.* This is not a proper basis for a written description rejection of a "comprising" claim. If it was, every "comprising" claim ever written would be invalid for failing to describe every nuance of the claimed invention. Furthermore, the specification demonstrates to one skilled in the art that Applicants were in possession of the claimed genera of nucleic acid molecules.

The purpose of the written description requirement is to ensure that the inventors had possession of the claimed subject matter, *i.e.*, to ensure that the inventors actually invented what is claimed. *Gentry Gallery Inc. v. Berkline Corp.*, 134 F.3d 1473, 1479, 45 U.S.P.Q.2d 1498, 1503 (Fed. Cir. 1998); *Lockwood v. American Airlines*, 107 F.3d 1565, 1572, 41 U.S.P.Q.2d 1961, 1966 (Fed. Cir. 1997); *In re Alton*, 76 F.3d 1168, 1172, 37 U.S.P.Q.2d 1578, 1581 (Fed. Cir. 1996). If a person of ordinary skill in the art would, after reading the specification, understand that the inventors had possession of the claimed invention, even if not every nuance, then the written description has been met. *In re Alton*, 76 F.3d at 1175, 37 U.S.P.Q.2d at 1584. A person of ordinary skill in the art, *e.g.*, a molecular biologist, would, after reading the present specification, understand that Applicants had possession of SEQ ID NO: 1, complements thereof and fragments of either, and therefore, the claimed invention.

Applicants have provided the nucleotide sequence required by the claims, *i.e.*, SEQ ID NO: 1, as well as, for example, vectors comprising the nucleic acid sequence (*see, e.g.,* specification at page 69, line 7 through page 77, line 4), and bacterial artificial chromosomes (BACs) that comprise or are complementary to the nucleic acid sequence (*see, e.g.,* specification at page 19, lines 3-24). The fact that the claims at issue are intended to cover molecules that include the recited sequence joined with additional sequences, or that hybridize under specific conditions to the recited sequence does not mean that Applicants were any less in possession of the claimed nucleic acid molecules. It is well-established that use of the transitional term "comprising" leaves the claims "open for the inclusion of unspecified ingredients even in major amounts." *Ex parte Davis*, 80 U.S.P.Q. 448, 450 (B.P.A.I. 1948). *Accord PPG Indus. v. Guardian Indus.*, 156 F.3d 1351, 1354, 48 U.S.P.Q.2d 1351, 1353-54 (Fed. Cir. 1998); *Moleculon Research Corp. v. CBS*, 793 F.2d 1261, 1271, 229 U.S.P.Q. 805, 812 (Fed. Cir. 1986).

The present application describes more than just the nucleotide sequence required by the claims (SEQ ID NO: 1). For example, it describes vectors comprising the claimed nucleic acid molecules (specification at page 69, line 7 through page 77, line 4), and describes how to make the nucleotide sequences and the libraries from which they were originally purified. *See* specification at page 3, line 4 through page 8, line 2, and Examples 1-3. Furthermore, the addition of extra nucleotides or detectable labels to the disclosed nucleotide sequence (SEQ ID NO: 1) is readily envisioned by one of ordinary skill in the art upon reading the present specification, in particular at page 39, line 9 through page 40, line 8 (describing fusion peptide molecules encoded by the claimed nucleic acid molecules), page 21, line 11 through page 22, line 16 (describing the

identification of microsatellites), page 67, line 23 through page 69, line 6 (describing site directed mutagenesis) and page 89, line 25 through page 90, line 5 (citing references describing the construction, manipulation and isolation of nucleic acid macromolecules). Moreover, it is well established that claims "may be broader than the specific embodiment disclosed in a specification." *Ralston Purina Co. v. Far-mor-Co*, 772 F.2d 1570, 1575, 227 U.S.P.Q. 177, 179 (Fed. Cir. 1985) (*quoting In re Rasmussen*, 650 F.2d 1212, 1215, 211 U.S.P.Q. 323, 326 (C.C.P.A.. 1981)).

The Examiner asserts that because Applicants have not disclosed "any nucleic acid that minimally contains the sequence of the claimed SEQ ID NO, including any full length gene which contain the sequence, and fusion constructs, any RNAs or cDNAs, etc.", Applicants have allegedly not adequately disclosed the claimed genus. Office Action mailed September 25, 2001, at page 6. The Examiner appears to assert that each nucleic acid molecule within the claimed genus must be described by its complete structure. These assertions are totally unfounded. The Federal Circuit has elucidated a test for written description wherein a genus of nucleic acids may be described by a structural feature that distinguishes members of the claimed genus from non-members of the claimed genus. *Regents of the University of California v. Eli Lilly and Co.*, 119 F.3d 1559, 1568-69, 43 U.S.P.Q.2d 1398, 1406 (Fed. Cir. 1997). Applicants have satisfied that test for written description.

In particular, Applicants have disclosed common structural features, for example, the nucleotide sequence of SEQ ID NO: 1. The respective common structural feature (the nucleotide sequence of SEQ ID NO: 1) is shared by every nucleic acid molecule in

the claimed genus, and it distinguishes the members of the claimed genus from non-members. For example, if a nucleic acid molecule such as an mRNA contains the nucleotide sequence of SEQ ID NO: 1, then it is a member of the claimed genus of nucleic acid molecules comprising a nucleic acid sequence of SEQ ID NO: 1. The same argument applies with equal force to variations of the claimed nucleic acid molecules. For example, one skilled in the art would readily recognize an mRNA including a nucleic acid molecule that has, *i.e.*, 95% sequence identity with SEQ ID NO: 1 as a member of the claimed genus. If a nucleic acid molecule does not contain SEQ ID NO: 1, then it is not a member of that claimed genus. The presence of other nucleotides at either end of the recited sequence will not interfere with the recognition of a claimed nucleic acid molecule as such – it either contains the nucleotides of SEQ ID NO: 1 or it does not. On skilled in the art, after reading the present specification, would clearly know if a nucleic acid molecule contains one of the recited nucleotide sequences.

Thus, claims 1-4, 6-9 and 16-20 are supported by an adequate written description pursuant to the requirements of 35 U.S.C. § 112, and as such, Applicants respectfully request reconsideration and withdrawal of this rejection.

5. Claim Rejections – 35 U.S.C. § 112, 1st Paragraph, Enablement

Claims 1-4, 6-9 and 16-20 stand rejected as not being enabled by the specification. The Examiner admits that the specification is enabling for polynucleotides and nucleic acids of SEQ ID NO: 1, however, the Final Action asserts the specification "does not enable any person skilled in the art ...to make and use the invention commensurate in scope with these claims." Final Action at page 5.

The Examiner cites no support for the proposition that the full scope of the claims would require undue experimentation by one of ordinary skill in the art to make or use the claimed invention. Furthermore, in view of the Examiner's admission that SEQ ID NO: 1 is enabled, and the well established patent jurisprudence that Applicants need not teach "conventional and well-known genetic engineering techniques" (*see, for example, Ajinomoto Co. v. Archer-Daniels-Midland Co.*, 228 F.3d 1338, 1345, 56 U.S.P.Q.2d 1332, 1337 (Fed. Cir. 2000)), which would include the use of the claimed nucleic acid sequences with other nucleic acid sequences, Applicants submit the Examiner has not met the required burden. Applicants further assert that the use of the transitional phrase "comprising" or "having", which leaves the claims "open for the inclusion of unspecified ingredients even in major amounts" (*Ex parte Davis*, 80 U.S.P.Q. 448, 450 (B.P.A.I. 1948). *Accord PPG Indus. v. Guardian Indus.*, 156 F.3d 1351, 1354, 48 U.S.P.Q.2d 1351, 1353-54 (Fed. Cir. 1998); *Moleculon Research Corp. v. CBS*, 793 F.2d 1261, 1271, 229 U.S.P.Q. 805, 812 (Fed. Cir. 1986)) is well established in patent jurisprudence.

The First Advisory Action attempts to abrogate the Examiner's burden to present evidence that the claims are not enabled by arguing that "the claimed invention, i.e. nucleic acids comprising or having the sequence of the elected SEQ ID NO: 1 is a genus that contains a highly variable species." First Advisory Action at page 2. In response, Applicants submit that an analysis of the criteria presented by *In re Wands* supports Applicants' position that no undue experimentation would be required to make and use the claimed invention. *See In re Wands*, 858 F.2d 731, 737, 8 USPQ2d 1400, 1404 (Fed. Cir. 1998).

The first *Wands* criterion is the quantity of experimentation necessary. The "make-and-test" quantum of experimentation is reduced by the extensive knowledge, *e.g.*, of conservative nucleotide substitutions, identification of an active site, and radiometric synthase assay conditions, to which a person of ordinary skill in the art has access. Performing routine and well-known steps, such as sequence alignment protocols, molecular weight determination, and antibody hybridization assays, cannot create undue experimentation even if it is laborious. *See In re Angstadt*, 537 F.2d 498, 504, 190 USPQ 214, 218-219 (C.C.P.A. 1976).

The second and third *Wands* criteria relate to the amount of direction or guidance given, and the presence or absence of working examples. Again, the specification provides evidence of sequence identity, discloses start and stop positions within a sequence, and discusses the use of the claimed SEQ ID NO to isolate additional sequences within a genome. *See, e.g.,* Examples 1-3 and Table 1. Based on such disclosure, one of ordinary skill in the art would be enabled to make and use the invention commensurate in scope with the claims.

The fourth, fifth, and sixth *Wands* criteria focuses on the nature of the invention, the state of the art, and the relative skill in the art. The present invention relates to nucleic acid molecules comprising nucleic acid sequences, and the specification further describes amino acid sequences derived therefrom, and constructs and methods related thereto. *See, e.g.*, specification at page 30, line 15 through page 40, line 8 (describing polypeptide molecules and homologues), and page 69, line 7 through page 86, line 15 (describing use of the claimed nucleic acid molecules in methods of transforming plants).

Practitioners in this art are guided by considerable knowledge and resources on the conditions and approaches that can be utilized to identify, confirm, and introduce into other hosts, nucleic acid and amino acid sequences.

The seventh criterion considers the predictability of the art. While the Final Action admits that the specification is "enabling for polynucleotides/nucleic acids of the elected SEQ ID NO: 1", the First Advisory Action alleges that this is not enabling for the full scope of the claims because "nucleic acids comprising or having the sequence of the elected SEQ ID NO: 1 is a genus that contains highly variable species." Final Action at page 5, First Advisory Action at page 2. Applicants respectfully disagree and assert, as discussed *supra*, that the specification discloses sufficient guidance to render the results of substitutions, additions, and deletions within the claimed SEQ ID NO predictable. *See, e.g.,* specification at page 32, line 18 through page 38, line 9.

The eighth criterion focuses on the breadth of the claims. Enablement is satisfied when the disclosure "adequately guide[s] the art worker to determine, without undue experimentation, which species among all those encompassed by the claimed genus possess the disclosed utility". *See In re Vaeck,* 947 F.2d 488, 496, 20 USPQ2d 1438, 1445 (Fed. Cir. 1991). In the present case, one of skill in the art is specifically guided by the disclosure to look to, *e.g.*, sequence identity data in making that determination.

The Examiner has presented no evidence supporting the allegation that one of ordinary skill in the art would not be able to make or use the claims nucleic acid molecules in light of Applicants' disclosure. Furthermore, the analysis of the Wands factors, discussed *supra*, conclusively establishes that one of ordinary skill in the art

would be able to make and use the claimed invention based on the disclosure in the specification. Accordingly, for at least these reasons, the enablement rejection under 35 USC § 112, first paragraph, is improper, and as such, Applicants respectfully request reconsideration and withdrawal of this rejection.

6. Claim Rejections – 35 U.S.C. § 102(b)

The Examiner has challenged the novelty of the claimed nucleic acid molecules in the Final Action. Claims 1-2 and 17-18 stand rejected under 35 U.S.C. § 102(b), for allegedly being anticipated by Birren *et al.* (Genbank accession No. AC005922, November 14, 1998) (hereinafter "Birren"). Final Action at page 6.

Birren does not anticipate the present claims. For a prior art reference to anticipate in terms of 35 U.S.C. §102, every element of the claimed invention must be identically shown in a single reference. *Diversitech Corp. v. Century Steps, Inc.*, 850 F.2d 675, 677, 7 U.S.P.Q. 2d 1315, 1317 (Fed. Cir. 1988). *See also Kalman v. Kimberly Clark Corp.*, 713 F.2d 760, 771 (Fed. Cir. 1983), *cert. denied*, 465 U.S. 1026 (1984). Birren does not teach every element of the claimed invention. Furthermore, Birren is not prior art to the present application under 35 U.S.C. § 102(b) because its alleged date is less than one year prior to the priority date of the present application.

The present application claims priority under 35 U.S.C. § 119 to United States Provisional Application No. 60/163,469, filed November 1, 1999, as reflected in the Amendment and Reply filed June 3, 2002. Contrary to the Examiner's assertions, the present claims are entitled to the priority date of November 1, 1999 because the prior

application ***does*** disclose the nucleotide sequence recited by the claims. In particular, the nucleotide sequence enumerated as SEQ ID NO: 1 in the present application was disclosed as SEQ ID NO: 17839 in Application No. 60/163,469, so the present application ***is*** entitled to this priority date. The date relied upon by the Examiner in applying the Birren reference is November 14, 1998, which is less than one year prior to the priority date of the present application (*i.e.*, November 1, 1999). Therefore, Birren is not prior art to the present application under 35 U.S.C. § 102(b), and as such the rejection should be reversed.

Moreover, even if Applicants were not entitled to their priority date, a rejection under 35 U.S.C. § 102 (b) is only proper if, *inter alia*, an anticipatory reference is available publicly. The Examiner has submitted no evidence that Birren was available to the public prior to Applicants' priority date. The Examiner apparently relies on the date the nucleotide sequence was submitted to the GenBank database to establish the reference date under §102(b). However, there is no evidence that Birren was actually published or otherwise made available to the public at ***any*** time prior to Applicants' priority date, let alone at least one year prior to the priority date.

Although Birren is cited for the proposition that it anticipates claims 1, 2, 17 and 18 as directed to SEQ ID NO: 1, the Examiner admits that Birren does **not** disclose the sequence of SEQ ID NO: 1. Office Action mailed September 25, 2001 (Paper Number 12), at page 10. Because the chemical disclosed in Birren is not the same as the chemical disclosed in SEQ ID NO: 1 or its complement, and does not have between 90% and 100% sequence identity with a nucleic acid molecule of SEQ ID NO: 1 or its

complement, every element of the claimed invention has not been identically shown in this reference. *See Diversitech Corp.*, 850 F.2d at 677, 7 U.S.P.Q.2d at 1317. Accordingly, Birren does not anticipate claims 1, 2, and 17-18, and the rejection under 35 U.S.C. § 102(b) is improper and must be withdrawn.

The Examiner's argument is based on the alleged disclosure in Birren of a 22 base pair sequence that is 100% identical to the complement of SEQ ID NO: 1, and "a fragment of about 100 bp that is complementary to the complement of SEQ ID NO: 1". Office Action mailed September 25, 2001, at page 10. Because the Examiner asserts that "any percentage of complementarity is interpreted as a complement, and that any length of a fragment including two or more amino acid residues as a fragment of the protein", in the Examiner's opinion the alleged "complementarity" of these small fragments[1] to SEQ ID NO: 1 makes them anticipatory to the claims. *See* Office Action mailed September 25, 2001, at page 10. This argument is wrong.

First, it is axiomatic that the claims are to be read in light of the specification. *See In re Vogel*, 422 F.2d 438, 441, 164 U.S.P.Q. 619, 622 (C.C.P.A. 1970). The claim language of Claims 1, 2, 17 and 18 recites "SEQ ID NO: 1 or complement thereof", and the present specification explicitly defines the term "complement" at page 19, lines 7-10:

> A nucleic acid molecule is said to be the 'complement' of another nucleic acid molecule if they exhibit complete complementarity. As used herein, molecules are said to exhibit 'complete complementarity' when every nucleotide

[1] Applicants note that Birren teaches a human chromosome segment that appears to be in excess of 29,000 base pairs in length.

> of one of the molecules is complementary to a nucleotide of the other.

The Examiner has not read the claims in light of the specification, as required by law, but rather has attempted to substitute a different definition of "complement" that the Examiner prefers to the explicit definition in the specification. This is impermissible.

Second, when the claims are read in light of the specification, it is clear that a nucleotide sequence cannot be the complement of SEQ ID NO: 1 unless "every nucleotide of one of the molecules is complementary to a nucleotide of the other." See specification at page 19, lines 7-10. The Examiner has not shown that ***every*** nucleotide of SEQ ID NO: 1 is complementary to a nucleotide of the sequence disclosed in Birren. Therefore, Birren has not been shown to teach every element of the present invention.

The Examiner's interpretation of the word "fragment" in claim 2 is similarly flawed. The Examiner has applied an untenable interpretation of Birren to cover small fragments of the specifically claimed nucleic acid molecule, *i.e.*, molecules as short as one codon, and thus concludes that claim 2 is anticipated by Birren. Office Action mailed September 25, 2001, at page 10. A grammatically consistent interpretation of claim 2, in light of Applicants' disclosure, would require any anticipatory reference to identically show a fragment nucleic acid molecule having about 50 to about 100 nucleotide residues. Birren clearly does not disclose such a nucleic acid molecule, as it discloses only one sequence that does not have about 50 to about 100 nucleotide residues. Accordingly, Birren does not teach each and every element of claim 2 and therefore cannot anticipate claim 2.

In conclusion, even if Birren were prior art to the present invention, Birren does not expressly or inherently anticipate claims 1-2 and 17-18 because the reference does not teach SEQ ID NO: 1, or any of the other claimed nucleic acid molecules. As such, claims 1-2 and 17-18 of the present invention are not expressly or inherently anticipated by Birren, and reconsideration and withdrawal is respectfully requested.

Conclusion

In view of the foregoing remarks, Applicants respectfully submit that the present application is now in condition for allowance, and notice of such is respectfully requested. The Examiner is encouraged to contact the undersigned at (202) 942-5000 should any additional information be necessary for allowance.

Respectfully submitted,

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